

Nalco Docket No.: 7724-NES
Customer No. 000049459

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REMARKS

This is reply to the Final Office Action mailed on October 20, 2004 ("Office Action").

Claims 1-17 are currently pending.

Claims 1-17 are rejected under 35 U.S.C. § 103(a) over N. Zaki, A. M. Al-Sabagh, "De-emulsifiers for water-in-crude oil-emulsions", Carl Hanser Verlag, München, Tenside Surf. Det. 34, 12-17 (1997) ("Zaki").

Claim 7 is amended to correct a spelling error.

No new matter is added by this amendment.

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DISCUSSION

The Rejection of Claims 1-17 under 35 U.S.C. § 103(a) over Journal Article titled "De-emulsifiers for water-in-crude oil-emulsions"

The Examiner has maintained and made final the rejection of claims 1-17 under 35 U.S.C. § 103(a) over N. Zaki, A. M. Al-Sabagh, "De-emulsifiers for water-in-crude oil-emulsions", Carl Hanser Verlag, München, Tenside Surf. Det. 34, 12-17 (1997) ("Zaki"). In reply to the arguments in Applicant's Amendment and Reply of January 20, 2005 to the effect that Zaki discloses different compounds than the compounds of this invention the Examiner states:

Applicant is correct in stating that the reference discloses "the polyalkylphenol-polyalkylenepolyamines-formaldehyde ethoxylates are prepared by reaction of one mole of polyalkylphenol-polyalkylenepolyamines-formaldehyde polymer with one mole of polyethylene glycol ---".

However, Applicant is incorrect in stating that the Zaki reference does not teach or suggest replacing the single molar equivalent of polyethylene glycol with at least five-fold molar excess of alkylene oxide to prepare a structurally different polymer, because the reference does disclose some variations such as the alkyl substituent of phenol chain length, the number of amino groups present in the polyalkylenepolyamines and the number of ethylene oxide groups used to ethoxylate the phenolic hydroxyl group.

Therefore, to modify the number of ethylene groups within the limitations of the instant claims is the level of ordinary skill in the art and would have been obvious in the absence of a showing of unexpected results derived from such modification.

Office Action at page 2.

Applicant respectfully traverses this rejection.

Applicant respectfully asserts that the number of ethylene oxide groups incorporated into the polyethylene glycol of Zaki is irrelevant, as no matter how many such groups are present, in all events only the phenolic oxygen atom of the polyalkylphenol-polyalkylenepolyamines-formaldehyde polymer is alkoxylated as a result of using one molar equivalent of the pre-formed polyethylene glycol. Similarly, Applicant respectfully asserts that the variations in alkyl chain length of the alkyl substituent of phenol and the number of amino groups present in the polyalkylenepolyamines is

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likewise irrelevant, as these variations do not speak to alkoxylation of the amino nitrogen atoms of the polyalkylenepolyamine.

The Examiner's attention is again respectfully directed to the structure shown in Applicant's specification at page 5 and claim 9 and Fig. 1 of Zaki.

Applicant respectfully asserts that the end result of reacting the alkylphenol-formaldehyde-diamine polymer with at least five molar equivalents of alkylene oxide as opposed to one molar equivalent of polyethyleneoxide is a comb like polymer where the teeth are the polyethyleneoxide groups. For example, while the Zaki polymer contains one such tooth per unit, a polymer according to this invention prepared from ethylenediamine or diethylenetriamine contains three or four times as many teeth per unit, respectively, as a result of alkoxylation of the nitrogen atoms of the diamines. *See also* specification at page 14, lines 7-11 for a discussion of the unexpected properties of the emulsion breakers of this invention.

Applicant respectfully asserts that nothing in Zaki teaches or suggests reacting an alkylphenol-formaldehyde-diamine polymer with at least five molar equivalents of alkylene oxide to prepared the comb-like polymers of this invention. Accordingly, Applicant respectfully requests withdrawal of the rejection of claims 1-17 under 35 U.S.C. § 103(a) over Zaki.

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CONCLUSION

In view of the foregoing amendment and remarks, Applicant respectfully requests withdrawal of the rejection under 35 U.S.C. § 103(a) and respectfully asserts that this application is in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully Submitted,



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